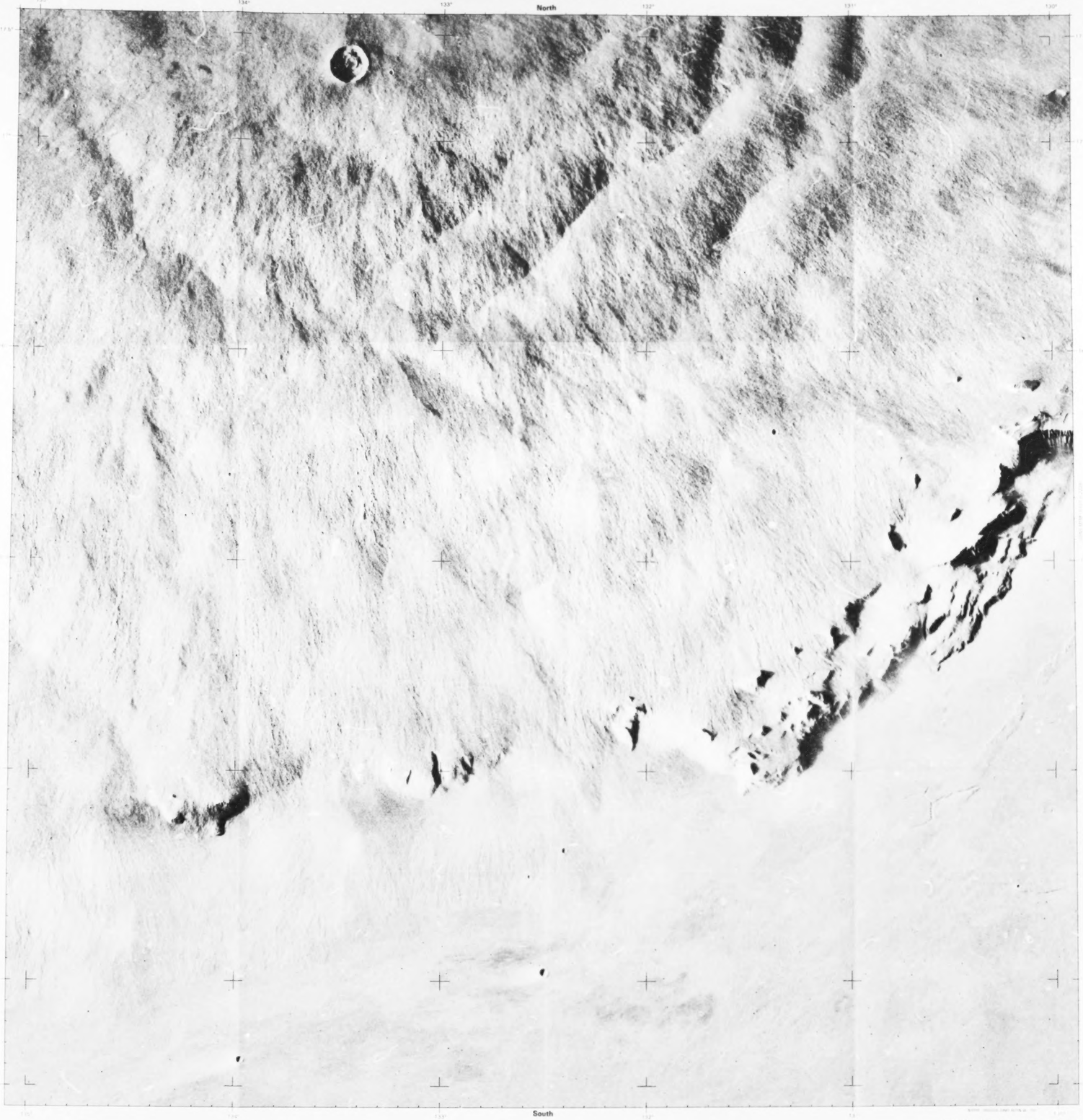
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared for the
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ATLAS OF MARS
1:500,000 TOPOGRAPHIC SERIES
MTM 15132: OLYMPUS MONS REGION
M 500k 15/132 CM, 1991
I-2227



SCALE 1:500,000 AT 15° LATITUDE
TRANSVERSE MERCATOR PROJECTION

KILOMETERS

INDEX OF VIKING PICTURES

The mosaic was made with the Viking pictures outlined above. Copies of various enhancements of these pictures are available from National Space Science Data Center, Code 601, Goddard Space Flight Center, Greenbelt, MD 20771.

INDEX MAP OF NOMINAL IMAGE RESOLUTION (METERS PER PIXEL)

NOTES ON BASE

This photomosaic covers part of an area of special scientific interest on Mars. It is published in a series designed to support topical studies, which is not expected to result in systematic coverage of the planet. The mosaic was compiled by digital methods described by Batson (1987) and Edwards (1987).

The distribution of Viking Orbiter images suitable for mapping at a scale of 1:500,000 is uneven, as are the quality and distribution of map controls. The mosaics are usually compiled in blocks of two or more adjacent quadrangles that are selected on the basis of scientific importance, not necessarily in areas of optimum coverage by high-resolution images or precise map controls. Image placement is based on a planetwide topographic control net that has a published standard error of 1 km (Wu and Schafer, 1984). A block of mosaics compiled in an area where controls have optimum distribution and precision is not likely to match adjacent blocks previously compiled in areas where controls are sparse or imprecise. Where discrepancies exist between adjacent mosaics, the more recent compilation is likely to be more accurate.

The projection is part of a Mars Transverse Mercator (MTM) system with 20° zones. The scale factor is 1 on the central meridian of the zone containing this quadrangle is 0.9960. The projection scale is based on an oblate spheroid flattening of 1/192 with an equatorial radius of 3393.4 km and a polar radius of 3375.7 km.

Digital processing and mosaicking were done by Patricia K. Thomas.

NOMENCLATURE

All names shown on the reduced base mosaic are approved by the International Astronomical Union (IAU, 1974, 1977).

M 500k 15/132 CM: Abbreviation for Mars; 1:500,000 series; center of sheet lat 15° N., long 132°; controlled photomosaic (CM).

REFERENCES

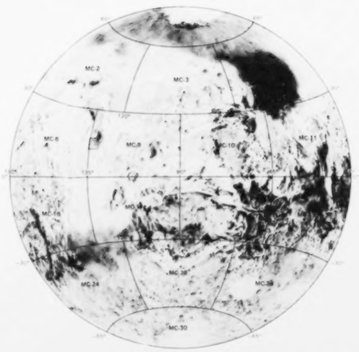
Batson, R.M., 1987, Digital cartography of the planets: New methods, its status, and its future: Photogrammetric Engineering and Remote Sensing, v. 53, no. 9, p. 1211-1218.

Edwards, Kathleen, 1987, Geometric processing of digital images of the planets: Photogrammetric Engineering and Remote Sensing, v. 53, no. 9, p. 1219-1222.

International Astronomical Union, 1974, Commission 16--Physical study of planets and satellites, and Lunar and martian nomenclature, in Proceedings of the 15th General Assembly, Sydney, 1973: Transactions of the International Astronomical Union, v. 15B, p. 105-108, 217-221.

_____1977, Working Group for Planetary System Nomenclature, in Proceedings of the 16th General Assembly, Grenoble, 1976: Transactions of the International Astronomical Union, v. 16B, p. 321-325, 331-336, 355-362.

Wu, S.S.C., and Schafer, F.J., 1984, Mars control network: American Society of Photogrammetry, in Technical papers of the 50th annual meeting of the American Society of Photogrammetry, v. 2, Washington, D.C., March 11-16, 1984, p. 456-463.



QUADRANGLE LOCATION

Photomosaic location is shown in the western hemisphere of Mars. An outline of 1:5,000,000-scale quadrangles is provided for reference.

LOCATION OF SELECTED FEATURES

Contrast in the reduced base mosaic was purposely suppressed to emphasize the names.

NOTE TO USERS

Users noting errors or omissions are urged to indicate them on the map and to forward it to U.S. Geological Survey, Building 4, Room 454, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.

CONTROLLED PHOTOMOSAIC OF THE MTM 15132 QUADRANGLE, OLYMPUS MONS REGION OF MARS

1991